

## REMARKS

### **Amendments to the Specification**

All amendments to the specification requested hereinabove are believed to introduce no new matter. However, the removal of the word “not” in the specification paragraph commencing on page 36 lines 39 to 43, bears some discussion. The specification paragraph having deleted word “not” starts out by stating that “the sterilization controller 1440 is programmed to assure a UVC irradiance *of at least 1.5 to 2 times the minimum irradiance necessary to inactivate the targeted micro-organisms* on the food product 115”. The next (i.e., second) sentence starts with the word “Thus”. Accordingly, this next sentence should to provide subject matter that follows from and/or is implied by the subject matter of the first sentence. However, the second sentence ONLY makes sense in the context of the first sentence if the word “not” is removed. Thus, it is believed that the deletion of the “not” does not introduce new matter.

### **Amendments to the Abstract**

The amended abstract provided herewith has been reduced to 150 words. Accordingly, it is believed that the Examiner’s objection of the abstract is appropriately addressed.

### **Rejections under 35 U.S.C 112, 2<sup>nd</sup> Paragraph**

The Examiner has rejected Claim 1 stating that it is not clear whether the “water sprays” are part of the claimed invention since they have not been positively recited. The language that the Examiner is apparently referring to has been deleted. However, the term “water sprays” remains in Claim 2. It is believed clear in Claim 2 as amended that “water sprays” are not part of the claimed invention. Accordingly, the present rejection is believed to be overcome.

The Examiner has rejected Claim 2 stating that in the clause “wherein the germicidal emitters are capable of withstanding water sprays approximately no more than 1,350 psig” is not clear what pressure the emitters should be “capable of withstanding” since 1350 psi contradicts the minimum of 1400 psi found in parent claim 1. It is respectfully submitted that the recitation of 1350 psi in the present claim does not contradict the previously recited pressure of

Claim 1. In particular, Claim 1 previously recited a **maximum** of 1400 psi. However, amended Claim 2 now also recites a **minimum** pressure of at least 1,100 psig. Accordingly, it is submitted that no contradiction exists between the pressure limitations of Claims 1 and 2, and, Claim 2 recites both a proper lower pressure limit, and an appropriate upper pressure limit for the water sprays.

The Examiner has rejected Claim 3 in similar manner to the rejection of Claim 2 stating that it is not clear what pressure the sprays use since 1250 psi contradicts the minimum of 1400 psi found in parent claim 1. As with the above remarks for Claim 2, it is believed that no contradiction exists with Claim 1 amended or unamended, and accordingly it is requested that the Examiner withdraw the present rejection.

The Examiner has rejected Claim 4 stating that the clause "wherein the germicidal emitters are capable of withstanding water sprays approximately no more than 200°F" is not clear since a temperature of 200°F contradicts the minimum of 210°F found in parent claim 1. It is respectfully submitted that the recitation of 200°F in the Claim 4 does not contradict the previously recited temperature of unamended Claim 1. In particular, Claim 1 previously recited a **maximum** of 210°F. However, amended Claim 1 does not recite a minimum temperature. Accordingly, it is submitted that no contradiction exists between the temperature limitations of Claims 1 and 4.

The Examiner has rejected Claim 5 in similar manner to the rejection of Claim 4 stating that it is not clear what temperature the water sprays use since 200°F contradicts the minimum of 210°F found in parent Claim 1. As with the above remarks for Claim 4, it is believed that no contradiction exists, and accordingly it is requested that the Examiner withdraw the present rejection.

#### **Rejections under 35 U.S.C 103(a)**

The Examiner asserts that Claims 1-5 and 15-32 are unpatentable over Newman (U.S. Patent No. 5,597,597, Newman herein) in view of Harris (U.S. Patent No. 4,776,267, Harris herein), and as evidenced by York (U.S. Patent No. 6,675,437, York herein). The Examiner appears to assert that all limitations of the presently rejected claims are disclosed in Newman with the exception of: (i) an assembly for moving some of the emitters, and (ii) the use of a high pressure and high temperature water spray. Further, the Examiner asserts that an assembly for moving some of the emitters is

disclosed by Harris, and a high pressure high temperature water spray (as apparently shown by York) were known to be used in food processing facilities.

Regarding Claim 1, this claim has been amended to recites that:

- (a) The transport “includes an interior that ***rotatably contacts the food product***” between the entry and exit of the transport, and
- (b) A support for supporting the assembly having at least one of the germicidal emitters, wherein the assembly is movable on the support between:
  - a first position for decontaminating the food product, wherein “the assembly is supported on the support so that ***a portion of the at least one germicidal emitter of the assembly is within the interior while the interior rotates***”, and
  - a second position wherein the at least one emitter is ***ineffective for inactivating, to a predetermined inactive level, the one or more micro-organisms on surfaces of the food product***, and wherein the portion of the at least one emitter is supported on the support outside of the interior.

There is no teaching or suggestion of the above combination of limitations in Newman, Harris and/or York. Moreover, providing at least one emitter (or portion thereof) within the interior of the food product transport has advantages over the prior art in that the germicidal, such as ultra violet radiation, is not blocked from disinfecting the food product by an inner support for the food product as it travels through the transport interior. Moreover, it is a further advantage that no such inner support for the food product is needed. Accordingly, it is believed that the combination of limitations of (a) and (b) above are effective for overcoming the Examiner’s rejection of Claim 1.

Regarding Claims 2-5, these claims are believed patentable at least due to their dependence on now patentable Claim 1. Additionally, since the Examiner has asserted that food processing facilities were commonly cleaned with high pressure and temperature water sprays, it is important to note that none of Newman, Harris or York suggest using the particular ranges of water spray temperatures and pressures recited in Claims 2-5. Moreover, it appears that the Examiner is using improper hindsight and/or

an “obvious to try” rationale in rejecting the pressure and temperature limitations recited in Claims 2-5. In particular, although Harris suggests that the hood 80 (having the lamps 100) is ‘pivotally connected to wall 84 along one side through a hinge 88 to facilitate cleaning and maintenance’ , from Harris’ Fig. 3 it appears clear that cleaning and maintenance of the lamps does not require them to be subjected to high pressure, high temperature water sprays. For example, assuming that the food support levels 74 and 76 within Harris’ apparatus were indeed cleaned with such a high pressure, high temperature water spray. There is no suggestion such sprays would be used on the lamps 100, and indeed the lamps would be substantially out of the way of such a spray when the hood is open. Additionally, Harris’ lamps 100 could be removed from the hood 80 prior to any such spraying, and replaced once such cleaning is completed. Thus, it is respectfully submitted that just because such water sprays may be known to be used in food processing generally, such knowledge is not sufficient to sustain the Examiner’s obviousness assertions relating to the emitter assembly of the present invention withstanding high temperature, high pressure water sprays. Furthermore, since neither Newman, nor Harris, nor any other known prior art disclose this aspect of the invention, it is believed that no such prior art appreciated the importance of protecting such germicidal emitters from such water sprays. This is possibly due to the fact that such germicidals were intended to be cleaned separately from any use of a high pressure, high temperature water spray. Moreover, in the present invention such protection is required since the emitter assemblies are very likely to be in at least partial contact with the food product being disinfected and thus require such water spray cleaning. More specifically, since the emitter assembly is at least partially *within* the interior of the food product transport while this interior is both contacting the food product and rotating it, portions of the food product may contact the assembly during operation, thus requiring such a water spray cleaning.

Regarding the Examiner’s rejection of Claims 6-14, it appears that at least some of the Examiner’s assertions do not apply to the claims. Accordingly, Applicant’s representative will endeavor to address the Examiner’s rejection of these claims as best as possible.

Regarding Claim 6, the Examiner's comments that appear most closely related to the content of the present claim is believed to be the comment that Newman teaches a device comprising a drum transport (Figure 10, #242). However, Claim 6 has been amended to recite "an interior surface of the drum includes at least a portion of the interior of the transport so that the interior surface of the drum rotates and contacts the food product therein". It is believed that since the drum 242 of Newman **can not** be the drum of the present claim (at least due to the emitter assembler being required to be in the interior of the transport), that Claim 6 is patentable

Regarding Claims 7 - 10, the Examiner's comment that appear most closely related to the content of the present claims is believed to be the comment that Newman discloses "replaceable spiral tumblers with recesses between them (Figure 9, #254)". However, Claims 7 through 10 are believed patentable at least due to their dependence on patentable Claim 6. Additionally, note that Claim 7 now recites that at least one of tumblers is configured for assisting in moving the food product from the entry of the transport to the exit of the transport. This limitation is not provided in Newman. In particular, Newman states exactly the opposite, i.e., his baffles 254 "**slow** the rate of throughput of the foodstuffs through the chamber" (Newman, column 8, lines 29-30).

Regarding Claim 11, the Examiner's comment that appear most closely related to the content of the present claim is believed to be the comment that Newman discloses "the drum having a decline" (Newman, column 8, line 15). However, neither Newman nor any combination of Newman, Harris and/or Welt disclose or suggest that an inclination of such a drum can be varied via an electronic controller while the drum is rotating. Accordingly, Claim 11 is believed patentable due to the amendment provided herewith as well as due to Claim 11 being dependent upon patentable Claim 9.

Regarding Claim 12, it is believed this claim is patentable due to its dependence on patentable Claim 6. Moreover, it is believed that Claim 12 is also patentable due to the additional limitation provided herewith; i.e., the drum "**includes a *cylindrical wall that prevents transmission of the germicidal therethrough for at least most of the drum extent***". Note that no such wall is disclosed or suggested in Newman. Indeed, such a wall would render Newman's apparatus at least degraded if not wholly ineffective since Newman's germicidal must

be transmitted through his food product support (i.e., Newman's drum 242, Fig. 10) in order to disinfect the food product therein.

Claim 13 is believed to be patentable due to its dependence on patentable Claim 7.

Claim 14 is believed to be patentable due to its dependence on patentable Claim 6. Additionally, Claim 14 now recites that at least one of tumblers is *detachable from the interior surface of the drum*. Such a limitation is not disclosed or suggested in the prior art. Accordingly, Claim 14 is believed patentable due to this additional limitation as well.

Claim 15 is believed patentable due at least to its dependence on patentable Claim 14.

Claim 16 has been amended to recite aspects of the controller wherein such controller aspects are also provided in pending Claims 42 and 43. In particular, the present claim recites that the controller sends a signal to change a rotational speed of the drum as a result of the controller determining a reduced emission of the germicidal for inactivating at least one of the micro-organisms. No such limitation is disclosed or suggested in the prior art. Accordingly, it is believed that Claim 16 is patentable both due to its dependence on patentable Claim 6 and due to the novelty recited here.

Claim 17 has been amended to recite aspects of the controller wherein such controller aspects are also provided in pending Claims 42 and 43. In particular, the present claim recites that the controller varies an amount of the germicidal emitted depending on an amount of the food product flowing through the interior of the transport. No such limitation is disclosed or suggested in the prior art. Note it is believed that Welt does not alter the amount of radiation emitted. Accordingly, it is believed that Claim 17 is patentable both due to its dependence on patentable Claim 1 and due to the novelty recited here.

Claim 18 has been amended to recite aspects of the controller, wherein similar controller aspects are also provided in pending Claims 42 and 43. In particular, the present claim recites that the controller detects whether a device for inhibiting the germicidal from escaping the interior is properly configured for such inhibition. No such limitation is disclosed or suggested in the prior art. In particular, Welt does not disclose or suggest a controller that detects whether such a device is properly configured. In fact, Welt has no need for such detection since the radiation protection in Welt is provided by "labyrinth-type passages" through concrete.

Claim 19 has been amended to recite that each of the emitters includes a glass container for emitting the germicidal, and each glass container is “***maintained in a shrink wrapped plastic coating fitting about the glass container during activation of the emitter***”. Applicant’s representative respectfully points out to the Examiner that there is no teaching or suggestion of using such shrink wrapped emitters for food sterilization in the present context. In particular, for rejecting the present claim, the Examiner appears to cite “a containment sleeve” (Fig. 10, #20) of Newman. It is assumed the Examiner means Fig. 9, #20 of Newman. However, #20 of Newman is clearly ***not*** shrink wrapped about any emitter. Accordingly, it is believed that Claim 19 is patentable both due to the reasoning provided here, and due to its dependence upon patentable Claim 1.

Regarding Claim 20, the Examiner appears to cite Newman, col. 5, line 28 as support for rejecting the present claim. Applicant’s representative fails to see the applicability of this or any other portion of Newman regarding the -40 degrees temperature limitation of the present claim. Accordingly, it is believed that Claim 20 is patentable both due to the reasoning provided here, and due to its dependence upon patentable Claim 1.

Regarding Claim 21, this claim has been amended to recite additionally that there is a controller for receiving “input from baffle sensors, wherein when the input is indicative of one of the baffles being in an undesirable configuration for operation of the food processing apparatus, the controller configures the food processing apparatus to be inoperable”. There is no teaching or suggestion in the prior art of this additional limitation. Indeed, Welt does not teach such a controller and does not teach baffle sensors. In fact, it is believed Welt has neither a use for such input from such sensors nor a user for the controller processing of the present claim since Welt purposefully configures the transport of pallets of products through “labyrinth-type passages” in order to shield the environment outside of his protective enclosure 1 from the gamma radiation to which products are exposed. Accordingly, it is believed that Claim 21 is patentable both due to the reasoning provided here, and due to its dependence upon patentable Claim 1.

Regarding Claims 22-29, it is believed these claims are patentable at least due to their dependence upon patentable Claim 1.

Claim 30 has been amended to recite a controller for varying a rate of rotation of the interior thereby varying a tumbling of the food product therein. It is believed that no prior art teaches varying such a rotation rate. Accordingly, it is believed that Claim 30 is patentable both due to the reasoning provided here, and due to its dependence upon patentable Claim 1.

Claim 31 has been amended to recite that at least one of the tumblers is ***detachable and replaceable by a different tumbler***. It is believed that no prior art teaches such limitations. Accordingly, it is believed that Claim 31 is patentable both due to the reasoning provided here, and due to its dependence upon patentable Claim 1.

Claim 32 is believed patentable at least due to its dependence upon patentable Claim 1.

Claims 42 and 43 were apparently only rejected due to their dependence upon the U.S.C. 112 rejection of Claim 1. Accordingly, it is believed that the present claim is patentable due at least to the patentability of Claim 1.

### **New Claims**

New Claims 53-67 are provided herewith. Claims 53-60 are dependent upon claims determined to be patentable hereinabove, i.e., Claims 1 and 7. Accordingly, it is believed these claims are patentable due at least to their dependence on such patentable claims. Moreover, it is submitted that none of the limitations in Claims 53-60 are taught or suggested in any of the known prior art, and accordingly these claims recite additional patentable novelty above and beyond the novelty of Claims 1 and 7.

Claim 61 is a method claim corresponding to Claim 1. However, Claim 61 does not include limitations related to the tumblers recited in Claim 1. It is believed that Claim 61 is patentable for substantially the same reasoning as Claim 1.

Claims 62-66 are dependent upon Claim 61. Accordingly, it is believed these claims are patentable due at least to their dependence on such patentable Claim 61. Moreover, it is submitted that none of the limitations in Claims 62-66 are taught or suggested in any of the known prior art, and accordingly these claims recite additional patentable novelty above and beyond the novelty of Claim 61.

Claim 67 is believed patentable for substantially the reasoning as Claim 1



Since all claims are now believed to be in condition for allowance, it is respectfully requested that the Examiner reconsider the patentability of the present application, and promptly allow the application to proceed to issuance. If the Examiner has any questions or concerns, it is requested that the Examiner contact the undersigned by phone.

Respectfully submitted,

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